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AUTHOR Smith, Conrad
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ABSTRACT

Research shows that reporters often seek out the most available news sources rather than those who have the most expertise, that journalists tend to focus on specific events rather than the context in which they occur, and that news stories are presented as stylized social constructs rather than as factual accounts of what happened. A study examined evening network television stories about the 1988 Yellowstone Park wildfires as a case study in the sociology of news. Four panels of experts (fire incident commanders and forest ecologists) were assembled to examine and evaluate videotaped network evening news stories about the Yellowstone fires on five-part Likert-type scales. To get journalists' perspectives, telephone interviews were conducted with the correspondent from each network who reported the largest number of stories about the fires and also with either a producer or regional bureau chief at each network who supervised coverage of the fires. Further information was obtained in personal interviews with key Yellowstone Park officials who dealt with reporters during the fires. Analysis showed that the TV networks covered the fires in a stylized and stereotyped way. The news stories did a poor job of serving educated nonspecialists seeking the information necessary to arrive at informed conclusions about the relevant ecological issues and related land management policies. (Four tables of data and 35 notes are appended.) (MS)

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Radio-TV Division

Brave Firefighters, Endangered National Icons and Bumbling Land Managers: Network TV Myths about the 1988 Yellowstone Wildfires

by

Conrad Smith
School of Journalism
The Ohio State University
242 West 18th Avenue
Columbus, Ohio 43210

614-292-6291 work
614-263-8063 home

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The Association for Education in Journalism and Mass Communication
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Brave Firefighters, Endangered National Icons and Bumbling Land Managers:
Network TV Myths About the 1988 Yellowstone Wildfires

Sociological research suggests reporters often seek out the most available news sources rather than those who have the most expertise, that journalists tend to focus on specific events rather than the context in which they occur, and that news stories are presented as stylized social constructs rather than as factual accounts of what happened. If accurate, these findings bode ill for news consumers seeking information about public issues. This paper uses a panel of experts and content analysis to examine evening network TV stories about the 1988 Yellowstone wildfires as a case study in the sociology of news.

The Yellowstone Fires

In the summer of 1988, more than 9,000 men and women fought fires that burned through about 2,000 square miles of Yellowstone National Park and nearby national forests. The fires were initially a local story and became national news on July 25 after 3,000 people were evacuated from a Yellowstone concession area. By early September, NBC television had 26 people on site[1] and ABC television was using four different satellite uplink trucks to feed footage to New York.[2]

The Yellowstone wildfires received considerably more media attention than other fires occurring at the same time in the Western United States that burned more fiercely[3] and that caused more property damage.[4] The flames in Yellowstone also received more media attention than past natural disasters, such as Hurricane Alicia, that resulted in hundreds of times as many injuries and dozens of times as many deaths.[5] This paper will draw on the sociology of news and of natural and industrial disasters as a tentative explanation of why the Yellowstone fires received so much media attention.

News Sources, Context and Socially-Constructed Reality

A fundamental assumption of journalism is that when reporters lack the expertise needed to cover a story, they can obtain it by interviewing knowledgeable people. In television, where most correspondents are general-assignment reporters, how these sources are chosen is particularly important. But Gans has observed that the practical constraints of journalism dictate that news is weighted towards sources who are easily available and eager to provide information.[6] The result of the way general assignment reporters cover local stories that become national news, according to Gans, is "almost always a national story which, by local standards, is inaccurate and exaggerated."[7]

Television reporters usually treated fire in Yellowstone as an agent of forest destruction. Scientists who study wildfire treat it as a natural part of the biological process. Research by Dunwoody and Ryan, however, indicates scientists are not likely to seek out reporters, either directly or through public information officials as mediators.[8] A study by Shepard and Goode suggests that when reporters do seek out experts, they often interview the wrong ones: scientists who have little standing among their peers.[9].

Research by Patterson[10] and Wilkins[11] indicates that disaster coverage tends to focus on immediate events rather than the context in which they occur, and suggests these stories are often told in terms of cultural stereotypes rather than as objective accounts of what happened. Other studies suggest the mass media often do a poor job of covering environmental issues such as the ecological aspects of forest fires. Glynn and Tims, for example, found that coverage of a controversy about whether a dam should be constructed at the expense of the endangered Snail Darter fish focused on the fish itself instead of relevant issues.[12]

The problem of stereotyped stories is not restricted to coverage of disasters and the environment. After observing television journalists at work, Altheide[13] concluded most events become news only after they are transformed to meet the practical needs of newsgathering organizations. He surmised that the transformation process often distorts events by removing them from the context in which they occurred. "Journalists," he said, "look for angles, interest and entertainment value."

Tuchman's observation of reporters, producers and editors led her to conclude that journalists frame stories as news by transforming real events into socially constructed "reality" that meets the organizational needs of news work.[14] In the process, some sources and facts are discarded because of shared notions among journalists about what constitutes news. She observed that television news is structured in terms of reporters who narrate from symbolic visual settings, through pictures that capture the symbolic essence of the ongoing event, and through the use of news sources who symbolically represent groups of people pertinent to the story.

The sociological literature about how the press deals with natural and industrial disasters indicates that coverage tends to be socially-constructed reality in the sense described by Altheide and Tuchman rather than objective reports of what actually happened.[15]

The Fires as News

NBC anchor Tom Brokaw offered a journalist's perspective on the newsworthiness of the Yellowstone fires in a 1989 speech in the park. "As a definition of hot news," he said, "it is difficult to improve on what was happening here last summer, no pun intended. Raging forest fires in Yellowstone National Park, America's oldest and arguably most popular national

park -- that's a big story by anyone's definition, print or electronic.[16] This is reminiscent of Tuchman's observation that journalists, faced with unexpected events that fall outside the daily newsgathering routine, cope with them by "invoking a special typification: 'What-a-story!'"[17]

Gans has said that most news is about public figures and social disorder.[18] The Yellowstone fires were a story about western senators who called for the resignation of the director of the National Park Service, and about cabinet officials who twice visited Yellowstone to assure the public that everything possible was being done to control the flames. The fires also fit all four of Gans' social disorder categories. They were stories about the natural disorder caused by burning forests, about social disorder because of the fires' effect on tourists and residents, about political disorder because of pressure from elected officials to keep the park open and to fight the fires more effectively, and about moral disorder because of charges that Yellowstone managers were not doing all they could to stop the fires.

Quarantelli has said "there is nothing that could remotely be called a middle-range theory of mass communications in disasters."[19] However, Mutch and Davis have proposed a sociological model of wildfire disasters that provides another theoretical perspective.[20] Based on earlier work by Turner,[21] the model divides wildfire disasters into six stages (Table 1).

TABLE 1 ABOUT HERE

This model helps explain why the Yellowstone fires received more media attention than other natural catastrophes which resulted in more victims and which affected those victims more severely. Unlike hurricanes and tornados, which are relatively common and culturally accepted in some parts of the world, the intensity of the Yellowstone fires exceeded cultural expectations and

surprised even wildfire experts. Because the scale of these fires violated culturally-accepted norms about government safety precautions against the spread of forest fires and about the ability of firefighters to extinguish them, the Yellowstone story became more newsworthy than other natural catastrophes that occur more often and are therefore more culturally accepted.

Another model disaster coverage is Nimmo's analysis of how the television networks reported the 1979 nuclear accident at Three Mile Island as a series of moral fables. He found that CBS covered the accident primarily as a political story, while ABC covered it as a melodrama, emphasizing sentimental values. NBC "demystified" the crisis by covering it in a calmer and less stereotyped way, providing a relatively factual account of events and their context.[22]

Hypotheses

To serve the public well, news stories must provide enough information for nonspecialized viewers and readers to reach intelligent conclusions about relevant issues and policies. Media accounts of the Yellowstone fires will help set the agenda for public discussion of fundamental issues related to the administration of public lands and the role of nature in their management. To the degree news coverage is distorted or incomplete, those discussions and the ensuing land management decisions may suffer.

Accurate information is a prerequisite for sound policy decisions. Several television reporters who covered the fires said that when the flames were dramatic there was no time to provide perspective or background. This suggests that stories that aired when the fires were most visually impressive, and therefore the most likely to capture public attention, were the least likely to be accurate. This suggests hypothesis 1:

H_1 Coverage during the peak fire period will be rated less accurate by experts than coverage before and after that period.

Research on the sociology of news suggests that the practical realities of how news is gathered can lead to distorted coverage because reporters do not interview appropriate experts, because events are reported without enough context to explain what they mean, and because of the tendency to cover news in a symbolic and stereotyped way that reconfigures events in the process of transforming them into news stories. Research by Nimmo suggests television news presentations may be distorted in different ways according to the differing organizational personalities of the three television networks. This suggests four additional hypotheses:

H_2: Analysis of news sources used in stories about the Yellowstone fires will support Gans' contention that sources are selected more for their availability than for their expertise.

H_3: The stories will tend to focus on the fires themselves rather than the ecological and land management context in which they occurred.

H_4: The fires will be covered in stylized symbolic terms rather than as factual accounts of what actually happened.

H_5: The way in which the stories were presented will vary according to the organizational personalities of the three television networks.

Method

Videotapes of evening network news stories about the Yellowstone fires were obtained from the Vanderbilt Television News Archive. The words of each story were transcribed, and scripts constructed that described each camera shot. Computer analysis facilitated finding the context in which key words and phrases, such as "let-burn" and "Old Faithful," were used. Verbal story themes

in network news packages were identified through the Gestalt content analysis described by Graber.[23] When a second coder independently coded 25 percent of the stories, 81 percent of the coding decisions were identical.

Four panels of experts were assembled to examine the coverage and to evaluate the accuracy and completeness of each story on five-part Likert-type scales. Each of the experts was provided with a videocassette containing all evening network stories about the fires, and a six-page evaluation form.

Five of the experts were incident commanders who supervised suppression efforts of major Yellowstone wildfires.[24] These people were asked to evaluate the overall accuracy of the fire coverage. The other three panels were asked only to evaluate the accuracy and completeness of those parts of the coverage that were related to their areas of expertise. Fire policy experts assessed the way wildfire suppression policy was portrayed,[25] fire behavior scientists examined the coverage of wildfire behavior,[26] and forest ecologists evaluated coverage of wildfire ecology.[27] In addition, the author of a scholarly history of American forest fires examined all of the television stories and provided his reactions to how the story was handled.[28]

To get journalists' perspective, telephone interviews were conducted with the correspondent from each network who reported the largest number of stories about the fires[29] and with either a producer or regional bureau chief at each network who supervised coverage of the fires.[30] In addition, tapes of the network coverage were examined and informal analysis provided by a Salt Lake City television reporter who produced an hour documentary about the fires[31] and by two of the three network correspondents who reported the most stories.[32] Further information was obtained in personal interviews with key Yellowstone Park officials who dealt with reporters during the fires.[33]

Effects of the 1988 fires were observed by the author in July, 1988 while they were burning and during February, April and June, 1989 after they were out. These inspections included 50 miles on foot, examination of areas that could be seen from more than 300 miles of park roads, and a three-hour chartered flight over the most severely burned areas.

Results

The coverage can be divided into three segments. During the initial period, July 25 through August 5, the fires in Yellowstone were treated as part of the larger story of wildfires throughout the west. During the peak period, between August 22 and September 18, all attention was focused on the drama in and near the park. Four follow-up stories between October 14 and December 15 described the ecological benefits of wildfire.

The first hypothesis was tested by comparing how panels of experts rated the accuracy of stories broadcast during the peak period with those aired before and afterwards when there was less drama. For each network, stories from this peak period were rated significantly less accurate than earlier and later stories (Table 2).

TABLE 2 ABOUT HERE

The second hypothesis predicted sources would be selected more for availability than expertise. Traditionally, natural catastrophes are covered in terms of victims and the public officials in charge of relief efforts. In stories about the Yellowstone fires, "victims" were tourists commenting about the fires or inconvenienced by them; and local residents, many of whom criticized the way the fires were being suppressed.

Land agency administrators and Forest Service spokespersons accounted for about a third of the 96 sound bites, as might be expected. Firefighters

appeared twice as often as their more knowledgeable supervisors, but the comments of individual firefighters were usually used to provide human interest rather than expert evaluation. There were eight stories in which scientists appeared, three of whom were from outside of Yellowstone Park. There were no interviews with experts on wildfire behavior or wildfire suppression policy. The news sources are described in Table B.

TABLE B ABOUT HERE

This breakdown of how sources were used supports Gans' contention that general assignment reporters seek the most easily available sources and cover stories in standard ways that can render coverage inaccurate and exaggerated by omitting relevant information.

Ecologist Norman Christensen, the only university scientist to appear in any of the network sound bites, wrote: "At the risk of sounding self-serving, I am amazed that no advantage was taken of the hundreds of experts on various aspects of the policy, technology, ecology, and economics of wilderness management and fire. In this sense, the networks reported what they were told by government agencies, colored by the reactions of tourists and property owners."

The third hypothesis was that stories would tend to focus on the fires themselves rather than the context in which they occurred. Gestalt analysis of verbal themes shows a recurring motif of flames and smoke with little interpretation or background to provide perspective. The panels of experts seem to agree. Ecologist Norman Christensen, for example, said: "None of the networks attempted to place this event in any context or synthesize the information. All closed the story with a superficial happy ending." Forest Service fire management policy expert John Chambers: "The failure to clearly

differentiate between fires that were allowed to burn initially versus those that were considered to be wildfires and fought from the very beginning resulted in an unfair focus on prescribed natural fire policy and the consequences of it." Fire behavior expert David Thomas:

> None of the networks thoroughly explained the background of the "let burn" policy, what it was, why there was such a policy, yet it had a tremendous influence on many of the reports. If it was mentioned, it was usually negatively, or through the eyes of the residents of one of the towns near the park. Another, I think stunning, oversight, was the fact there were large forest fires, including other "let burn" fires, burning out of control all over the Western United States.

Larry Warren, a Salt Lake City television reporter who spent much of the summer covering the story, gave a television reporter's perspective:

> In fairness, hard information was difficult to come by on deadline. Fire behavior was anyone's guess. It was easy to get caught up in the excitement and show only flames and report acreage totals. But there was too little clarification of two key factors: More often there should have been explanations of fire behavior to indicate that not all the acreage had burned. And the networks owed it to viewers and the Park Service to understand and correctly report the fire policy.

These comments support Altheide's conclusion that events are removed from their context in the process of being transformed into news stories, and Tuchman's observation that some sources and facts are discarded because of shared notions among journalists about what constitutes news.

The forth hypothesis anticipated that the fires would be covered in stylized symbolic terms rather than as factual accounts of what actually

happened. Members of the panels of experts found stereotyped language in many of the stories. "I've often felt," wrote fire behavior expert David Thomas, "that reporters don't dig beyond the common cliches associated with forest fires — scorched earth, epic events, devastation and destruction, etc. -- and the result is a one-sided, one-dimensional view of fire. The coverage associated with Yellowstone was piecemeal, and the public only got a splintered view of what was going on."

"It seemed to me," wrote ecologist James Brown, "that a single theme carried through practically all of the stories made an accurate ecological understanding of the fires very difficult. That theme was that firefighters battled to stop wildfire that threatened to destroy lives, property, and resources. Loaded words and phrases such as 'acres consumed,' 'acres destroyed,' 'disaster,' 'a shame,' etc., were used to describe the fires. The fires did burn over the landscape, but they did not destroy it." He noted that sound bites selected to emphasize negative aspects of the fires greatly outnumbered those that mentioned fires are a natural part of the forest cycle.

According to ecologist Stephen Arno, thousands of scientific papers document that much of the Western United States has been in a fire-dependent ecosystem at least since the last ice age. Although each television network ran stories about the ecological benefits of wildfires, these stories ran late in their newscasts, and the majority aired long after the fires were under control. Only two ecologists from outside Yellowstone served as on-camera news sources. By comparison, there 14 sound bites from tourists and another 14 from local residents, none of whom appeared scientifically knowledgeable.

Camera shots of flames and firefighting accounted for more than 40 percent of the 861 news pictures. These scenes, as Tuchman might have predicted,

represented the fires symbolically but provided little context to explain why they were burning, or what they meant in political or ecological terms.

Network correspondents were often shown against burning backdrops that represented the fires symbolically. All three networks made regular use of two visual symbols of Yellowstone: scenes of wildlife and of Old Faithful Geyser. The well-known geyser appeared 18 times, although the fires visited that site only on September 7 (see Table 4). Yellowstone Falls, an equally impressive but less symbolic park feature that was approached by fire, was shown only once, and in another context. In the words of wildfire history expert Stephen Pyne, "the networks seemed intent on giving people the images they expected to see -- troops on the fireline, firefighters marching in columns, air tankers in action, and lots of wildlife."

TABLE 4 ABOUT HERE

The way news sources were used underscores some of the differences among networks that were predicted by the fifth hypothesis. For example, CBS had half of the six sound bites with elected politicians, but no interviews with fire suppression administrators and only one of the 14 interviews with local residents. ABC had 10 of the 11 sound bites with firefighters, but was the only network not to interview a single elected official on camera. NBC provided more balanced coverage of both the human interest and political angles, using sound bites from sources in all of the categories.

As in the video, all three networks made frequent use of words representing two symbols of the park: Old Faithful Geyser and the wildlife that inhabit the park. Words describing wildlife appear much more often in CBS coverage, suggesting a more stylized and symbolic treatment of that aspect of the fires. Words such as "destruction," anathema to fire ecologists in

descriptions of wildfire, were often used by each network. For each use of "destruction" or "destroy" describing the fires' effects on man-made structures, there were three uses of the word to describe the fire's effects on trees, forests or acres. The word "threat," on the other hand, was nearly always used to describe the fires' potential effects on people and structures.

The way each network used language to describe the fires, Yellowstone Park and Old Faithful Geyser further distinguishes the differing styles with which the story was approached. ABC covered the story in a folksy, down-to-earth manner, in the way one person might ask another, "Did you hear what happened in Yellowstone today?" Two quotes from Peter Jennings capture the spirit of this approach: On September 7, when he said "And listen to this one. Until now, no more than 30 thousand acres of the park have ever burned in a whole year. Yesterday, 45 thousand acres were destroyed in one day." And on September 8, when Jennings said "The quote of the day comes from a tourist who was evacuated from Yellowstone National Park just ahead of the forest fires. Thank God, he said, that I've got pictures of the way the park was, because I'll never see it that way again — at least, not unless he lives for another hundred years."

CBS covered the fires primarily as a political story, and described them in more ominous and anthropomorphic terms than the other two networks. On September 8, Dan Rather said "part of our national heritage is under threat and on fire tonight," and went on to say that the fires "menace one of the nation's most scenic sights." The same day, he talked of the "legendary Old Faithful Geyser," and of a forest fire that "laid siege to two small communities." On September 12, he referred to the fires as a "sleeping giant." On December 2, he talked of the "millions here and abroad" who "saw horrifying pictures as much of the park literally went up in smoke."

NBC generally used more neutral language to describe the fires and their effects, but not always. On August 24, Garrick Utley introduced that night's fire coverage by saying "A natural but dangerous drama of epic size moved closer to humans. And the humans got out of the way." On September 7, Tom Brokaw said that Old Faithful was "under siege." On September 9, he talked of wildfires "that would not die."

Discussion

The three network correspondents who covered the most 1988 evening news stories about the Yellowstone fires were Roger O'Neil of NBC, Gary Shepard of ABC and Bob McNamara of CNN.

Roger O'Neil said hindsight suggested that different words and emphasis might have been more appropriate. He said that mistakes in coverage were, in part, attributable to a "mostly inept public information system," and said that editor's desires to "have the 'best stuff' on the air ... is a constant in the back of any national reporter's mind." He added, "please don't take (this) out of context, but let's face it, even television news at the network level has, to my chagrin, become 'entertainment-ized."

Gary Shepard said hindsight showed that accounts of the fires' effects at Yellowstone were exaggerated, but that all statistics about the fires' effects came directly from official information sources. Asked to speculate why some Americans got the incorrect impression that Yellowstone was reduced to ashes, he said people may have seen pictures of the fires (76 separate scenes on ABC alone) without paying attention to the words. He said you can't go into every home and tell people to pay attention. Shepard also said that the use of satellite uplink trucks puts the reporter into a different mind-set. If he had known

next day, he said, he might have spent two hours instead of 20 minutes on a given part of it.

Bob McNamara said the extreme fire conditions contributed to the tone of coverage, and described a day when thick smoke turned the sky dark as night in mid-afternoon. The fact that veteran firefighters had never seen anything like these fires also contributed to how the fires were covered, he said. He said there was much confusion among official information officers, who often could not take a reporter to a reliable source or to the location of one of the fires. Asked why viewers thought the park had burned down, McNamara said it was because everyone saw it on the evening news.

At a May 20, 1989 news conference in Yellowstone Park about how the networks covered the 1988 fires there, NBC anchor Tom Brokaw said "I think there was an absence, by and large, of sophistication on the part of news consumers." In a speech following the news conference, Brokaw compared covering the Yellowstone fires to "the fog of battle," saying that reporting the story was a "logistical nightmare." He defended flaws in coverage by saying that each news consumer was exposed to ongoing broadcast and print coverage that rendered errors in individual news stories unimportant, an argument similar to Carey's comparison of news to a college curriculum.[34]

It seems reasonable to suggest that flawed news stories are sometimes made up for by aggregate coverage that is better. This appears partially true of the Yellowstone coverage in that some stories were better than others, and in that magazine articles and books about the fires covered them in more detail and with more perspective than was possible on television. Motivated news consumers are unlikely to be misinformed in the long term by occasional errors in individual stories.

However, this "aggregate coverage" perspective does not address misunderstandings caused by series of stories that contain the same fundamental flaws again and again, such as the inappropriate use of news sources or the portrayal of events without explanation of why they happened and what they mean. Nor does it address problems caused by unsophisticated or unmotivated news consumers who act on information in flawed news stories without seeking the additional information available to those who pursue it. The assessments by experts suggest coverage was at its least accurate when the fires were the most newsworthy and therefore most likely to capture public attention.

With continuing 1989 coverage, television stories about the 1988 fires have, in aggregate, gone a long ways toward addressing the misconception that all of Yellowstone Park burned down. They have done less to rectify cultural misconceptions about the ecological role of forest fires, and virtually nothing to correct several basic misconceptions that collectively gave the impression that very little would have burned in 1988 if all of the fires had been fought from the beginning. Flawed news accounts may have contributed substantially to August and September hysteria among area residents and national politicians about Yellowstone's controversial natural burn policy.

How this particular story was covered is less important than implications in that coverage for how journalists report other important issues. Public policy about airline safety, oil spills, nuclear disarmament and other subjects that affect us all can only be as good as the information available to voters, policy makers and politicians. Much of that information comes from the mass media. Without public support, even enlightened federal officials, effective arms negotiators and well-informed legislators will have difficulty making good policy, negotiating good treaties or passing good legislation.

As the sociological literature had predicted, television networks covered the 1988 Yellowstone fires in a stylized and stereotyped way; as fables about brave firefighters, powerful natural forces, bumbling bureaucrats, and anthropomorphized fires and forest creatures; all represented in symbolic terms by Old Faithful as a national icon and by fire as a largely evil threat to Yellowstone Park as a national treasure. In perpetrating these myths, the news stories did a poor job of serving educated nonspecialists seeking the information necessary to arrive at informed conclusions about the relevant ecological issues and related land management policies.

Walter Lipmann identified the basic problem in 1922. "There is a very small body of exact knowledge," he said, "which it requires no outstanding ability or training to deal with. The rest is in the journalist's own discretion. Once he departs from the region where it is definitely recorded at the County Clerk's office that John Smith has gone into bankruptcy, all fixed standards disappear."[35]

The sociological literature on news and the results of this study suggest journalists and journalism educators might serve themselves well by establishing fixed reporting standards that go beyond the traditional concern with correctly spelled names and correctly described facts. It may ultimately be more important which facts are reported than how accurately each one is rendered. Codes of journalistic ethics are a step in this direction, but they are too broad to serve as effective professional guidelines for the day-to-day newsgathering decisions each journalist must make.

Footnotes

[1] Roger O'Neil, Denver Bureau Chief, and Jim Cummins, correspondent; Jim Lee, Polly Powell, Barbara Bohusz, Chuck Omudson and Jerry Hansen, producers; Niki Stamos, coordinator; Steve Sung and Gary Swanson, editors; George Peebles, Shaun White, Mark Eveslage, Bob Goldsborough and Holt Hollyfield, photographers; Phil Lauter, camera/sound; Don Downey, Dan Edblom, Verstelle Palmer, April Langford and Warren Furgeson, sound; Frank Novak, Paul Schlader and Vinny Lucchese, flyaway uplink pack technicians; Doug Hansen and San Bryan, satellite truck engineers

[2] Telephone conversation, ABC producer Harry Chittick, September 27, 1988.

[3] The Yellowstone fires caused considerably less property damage but received much more coverage than a September, 1988 forest fire that burned more than 100 expensive homes near Sacramento.

[4] In 24 hours starting the night of September 5, The Canyon Fire in Montana's Scapegoat Wilderness burned through 180,000 acres, more than all the Yellowstone-area fires combined ever burned in the same amount of time. Two towns threatened by Yellowstone-area fires received extensive coverage while larger towns threatened by the Canyon fire received no network coverage at all.

[5] The New York Times, Washington Post and USA Today ran more stories about the Yellowstone fires than about Hurricane Alicia. None of the evening network stories about the Yellowstone fires contained accounts of deaths, injuries, or destruction of permanent residences. By comparison, Hurricane Alicia killed 21 people, injured 1,530 and damaged 3,000 residences, according to Dennis Wenger and Barbara Friedman, "Local and National Media Coverage of Disaster: A Content Analysis of the Print Media's Treatment of Disaster Myths" (preliminary paper #99). Newark, DE: University of Delaware, Disaster Research Center.

[6] Herbert W. Gans, Deciding What's News: A Study of CBS Evening News, NBC Nightly News, Newsweek, and Time. New York: Vintage, 1979.

[7] Ibid., p. 141.

[8] Sharon Dunwoody and Michael Ryan, "Scientific Barriers to the Popularization of Science in the Mass Media, Journal of Communication 35:26-42 (1985) and "Public Information Persons as Mediators between Scientists and Journalists," Journalism Quarterly 60:647-656 (1983).

[9] Robert Gordon Shepard and Erich Goode, "Scientists in the Popular Press," New Scientist, November 24, 1977, pp. 482-484.

[10] Philip Patterson, "Reporting Chernobyl: Cutting the Government Fog to Cover the Nuclear Cloud," in Lynne Masel Walters, Lee Wilkins and Tim Walters, Eds., Bad Tidings: Communications and Catastrophe. Hillsdale, NJ: Lawrence Erlbaum, 1989, pp. 131-147

[11] Lee Wilkins, "Bopohl: The Politics of Mediated Risk," In Walters, Wilkins Walters, op. cit., pp. 21-34.

[12] Carroll J. Glynn and Albert R. Tims, "Sensationalism in Science Issues: A Case Study." Journalism Quarterly 59:126-131 (1982).

[13] David L. Altheide, Creating Reality: How TV News Distorts Reality. Beverly Hills: Sage, 1976.

[14] Gaye Tuchman, Making News: A Study in the Social Construction of Reality. New York: Free Press, 1978.

[15] E. L. Quarantelli, "The Social Science Study of Disasters and Mass Communication," in Walters, Wilkins and Walters, op. cit., pp. 1-19.

[16] Transcribed by the author from an audio tape of a news conference and speech by Tom Brokaw to the Greater Yellowstone Coalition at Old Faithful, May 20, 1989.

[17] Op. cit., p. 59.

[18] Op. cit.

[19] Op. cit., p. 14.

[20] Robert W. Mutch and Kathleen Davis, "Visitor Protection in Parks and Wildernesses: Preventing Fire-Related Accidents and Disasters." In James E. Lotan et al, Proceedings--Symposium and Workshop on Wilderness Fire: Missoula, Montana, November 15-18, 1983 (General Technical Report INT-182). Ogden, Utah: Intermountain Forest and Range Experiment Station, 1985, pp. 149-158. The model is based on an earlier article by Barry A. Turner: "The Development of Disasters--A Sequence Model of the Origin of Disasters." Sociological Review 24:753-774 (1976).

[21] Barry A. Turner: "The Development of Disasters--A Sequence Model of the Origin of Disasters." Sociological Review 24:753-774 (1976).

[22] Dan Nimmo, "TV Network News Coverage of Three Mile Island: Reporting Disasters as Technological Fables." International Journal of Mass Emergencies and Disasters 2:115-145 (March).

[23] Doris A. Graber, "Gestalt Coding of Television News." Paper presented to the Midwest Association for Public Opinion Research, Chicago, April, 1985.

[24] The incident commanders, each of whom had overall responsibility for suppression efforts on one or more of the major fires, were Denny Bungarz, Richard Gale, David Liebersbach, David Poncin and Fred Roach.

[25] The fire policy experts were Bruce Kilgore and John Chambers, key fire policy officials in the National Park Service and U.S. Forest Service, and Ron Wakimoto of the University of Montana. Kilgore and Wakimoto participated in the Fire Management Policy Review requested by the Secretaries of Interior and Agriculture to investigate how the 1988 Yellowstone fires were suppressed.

[26] The fire behavior experts were Richard Rothermel of the Intermountain Fire Sciences Lab in Missoula, who pioneered the scientific study of wildfire behavior; Rod Norum of the Interagency Fire Center in Boise; and John Krebs and David Thomas, who were fire behavior specialists assigned to specific fire suppression efforts in Yellowstone. Krebs and Thomas were recommended by Dr. Rothermel.

[27] The fire ecologists were Stephen Arno and James Brown of the Intermountain Fire Sciences Lab in Missoula and Norman Christensen of Duke University. Members of the panel have published numerous scientific papers about fire ecology.

[28] Stephen Pyne, author of Fire in America: A Cultural History of Wildland and Rural Fire. Princeton, NJ: Princeton University Press, 1982.

[29] NBC's Roger O'Neil, who did 13 1988 evening news stories about the fires; ABC's Gary Shepard, who did eight; and CBS' Bob McNamara, who did four.

[30] ABC producer Harry Chittick and CBS bureau chief Jennifer Siebens of Los Angeles; NBC Denver Bureau Chief Roger O'Neil.

[31] Reporter Larry Warren of Salt Lake City NBC affiliate KUTV.

[32] Roger O'Neil of NBC and Gary Shepard of ABC.

[33] On February 3, 1989 with Yellowstone superintendent Bob Barbee, research chief John Varley, chief ranger Dan Sholly and public affairs officer Joan Anzelmo and on April 25, 1989 with chief naturalist George Robinson

[34] James W. Carey, "Why and How: The Dark Continent of American Journalism," in Robert Karl Manoff and Michael Schudson, Eds., Reading the News (New York: Pantheon, 1986), pp. 146-196.

[35] Walter Lippman, Public Opinion (New York: Free Press, 1922/1965), p. 227.

Table 1

Sociological Model of the Yellowstone Wildfires

Stage I:	Predisaster Starting Point: Initial culturally accepted beliefs about wildfire hazards. Based on urban concepts of fire, Smokey the Bear, Bambi, etc. Precautionary rules are set out in laws, guidelines for practices, fire policies, and so on. The cultural assumption is that fire policy will be administered in such a way that developed areas will not be threatened by fire.
Stage II:	Incubation Period: Accumulation of an unnoticed set of events that are at odds with accepted beliefs about wildfire hazards and the precautions taken to avoid them. Drought conditions and unprecedented weather conditions lead to worse-than-predicted fire danger.
Stage III:	Precipitating undesirable event: Undesirable prescribed fire situation that forces a redirection of attention and transforms general perceptions of Stage II. Fire forces evacuation of Grant Village, a tourist facility inside Yellowstone.
Stage IV:	Onset: The immediate consequences of the collapse of cultural precautions regarding prescribed fire become apparent. Donald Hodel, Secretary of the Interior, visits Yellowstone three days after the evacuation of the facility at Grant Village.
Stage V:	Suppression, rescue, and salvage: The immediate postcollapse situation is recognized and fire control, rescue and salvage activities are started. All fires go into suppression mode, but firefighters are unable to extinguish them. Fires cause three more major evacuations within Yellowstone, and lead to the evacuation of two towns near the park. The spread of the fires continually exceeds the worst-case predictions by experts. Culturally-accepted wildfire norms about fire hazards are violated again and again. This leads to increased press coverage, just as when a political candidate unexpectedly wins a presidential primary.
Stage VI:	Full cultural readjustment: An investigation is carried out and beliefs and precautionary norms regarding prescribed fire hazards are adjusted to fit the newly gained understanding of the character of prescribed fire hazards. This process is now in progress, but no complete. A Fire Management Review team has reviewed Yellowstone fire policy, and has made recommendations to the secretaries of Agriculture and Interior. Other panels of experts continue various investigations about the 1988 fires that so severely violated accepted cultural beliefs about wildfire hazards.

[1] adapted from Robert W. Mutch and Kathleen Davis, "Visitor Protection in Parks and Wildernesses: Preventing Fire-Related Accidents and Disasters." In James E. Lotan et al, Proceedings--Symposium and Workshop on Wilderness Fire: Missoula, Montana, November 15-18 1983 (General Technical Report INT-182). Ogden, Utah: Intermountain Forest and Range Experiment Station, 1985, p. 153.

Table 2

Panels of Experts' Assessments of Accuracy:
1988 Evening Network Coverage of the Yellowstone Wildfires

1 = inaccurate
5 = accurate

Network	Peak[1] Coverage Period (Mean)	Non-Peak[2] Coverage Period (Mean)	(N)	(t)
ABC	3.60	4.08 ***	14	3.77
CBS	3.55	4.21 ***	12	4.44
NBC	3.40	4.16 ***	14	4.56

Note: *** means $p \leq .001$ (one-tail t-test).

1 August 22 through September 18, 1988 when the fires were the most dramatic.

2 July 25 through August 5 and October 14 through December 15.

Table 3

Evening Network News Sound Bites About the Yellowstone Forest Fires: July 25 through December 15, 1988

	Total (N=96)		ABC (N=38)		CBS (N=17)		NBC (N=41)	
Type of Source	# of Sources	# of Words	# of Sources	# of Words	# of Sources	# of Words	# of Sources	# of Words
Land Agency Administrators	16	622	4	244	3	70	9	308
Local Residents	14	421	5	114	1	57	8	250
Tourists	14	242	4	84	3	46	7	112
Forest Service Spokespersons	11	278	5	134	3	61	3	83
Firefighters	11	232	10	225	1	7	0	0
Scientists	8	316	2	54	2	93	4	169
Fire Suppression Aministrators[1]	6	267	2	47	0	0	4	220
Elected Politicians	6	157	0	0	3	73	3	84
Other[2]	10	252	6	146	1	22	3	84

Note: "Soundbite" is defined as a person talking to the correspondent in a given story. A person appearing more than once in a story is counted as one source. There are also 17 instances of people talking to each other (such as a ranger talking to a tourist), comprising 275 additional words.

[1] Includes a fire information officer (Pat Kaunert) incorrectly identified as a fire commander on NBC. Does not include four incident commanders identified only as representatives of the U.S. Forest Service (Denny Bungarz and Mike Warren on ABC, Fred Roach on CBS and Dave Poncin on NBC).

[2] Three Yellowstone concession workers, an EPA spokesman, an environmental organization president, a timber industry spokesman, the author of a book criticizing Yellowstone management policies, a local law enforcement officer, a National Park Service spokesman, and a man incorrectly identified by ABC as the National Park Service Director.

Table 4

1988 Network Coverage of the Yellowstone Wildfires

Characteristic	Total	ABC	CBS	NBC
Length in minutes	83:13	30:35	15:13	37:25
Number of stories	49	22	10	17
Number of pictures	861	298	189	374
Flames	184	76	49	59
Firefighters	182	62	35	85
Tourists	81	28	15	38
Wildlife	52	18	8	26
Old Faithful Geyser	18	7	6	5
Other named tourist attractions in Yellowstone	2	0	2	0
Uses of electronic graphics[1]	12	2	3	7
Number of words	15,029	5,661	2,743	6,625
from news anchors	2,909	1,302	550	1,057
from correspondents	9,058	3,230	1,709	4,119
in sound bites[2]	2,787	1,048	429	1,310
as "sound-up"[3]	275	81	55	139

[1] Nine were maps. Does not include graphics over anchor's shoulder in most stories, in which words such as "wildfires" were superimposed over an image of burning trees.

[2] Person talking to the correspondent.

[3] People talking to each other rather than to the correspondent, as when we hear a ranger talking to a tourist.